



THE POWER OF HEALTH



Combat Care Continuum

March 2025

TABLE OF CONTENTS

- Care Under Fire.....3
- Tactical and Prolonged Field Care Course.....6
- Care Under Fire to Prolonged Field Care.....9
- Trauma Resuscitation and Mass Casualty Management Course.....12
- Damage Control Surgery (DCS) Course.....15
- Post-operative Care and Long-term Evacuation Course.....18



CARE UNDER FIRE

info@iqarus.com
www.iqarus.com

[IQARUS]
THE POWER OF HEALTH

CARE UNDER FIRE

I. Introduction to Tactical Emergency Medical Care

This module provides an overview of pre-hospital medical care in high-threat environments. Participants will learn about the critical role of medical personnel in tactical settings and the unique challenges they face. The distinctions between civilian Emergency Medical Services (EMS) and tactical medicine will be examined, with an emphasis on the guiding principles of Tactical Combat Casualty Care (TCCC).

II. Threat Assessment and Scene Safety

This section emphasises the importance of assessing and responding to hostile environments. Medical providers will be taught how to establish security before delivering care, understanding that medical interventions may need to occur simultaneously with threat mitigation. Coordination and communication with tactical teams and law enforcement will be highlighted, alongside practical techniques such as utilising cover and concealment to ensure the safety of medical personnel during operations.

III. Phases of Care in High-Threat Environments

1. **Care Under Fire (CUF):** In this phase, providers will focus on immediate, life-saving interventions under active threats. Key topics include performing two-person triage, prioritising haemorrhage control through the use of tourniquets and pressure dressings and efficiently relocating casualties to safer positions using drags or carries. Due to the ongoing threat, medical interventions are intentionally minimal during this phase.

2. **Tactical Field Care (TFC):** Once a relatively safe zone has been established, more comprehensive care can be administered. This includes managing airways with tools such as nasopharyngeal airways and supraglottic devices, providing respiratory support through chest seals and needle decompression, and applying fluid resuscitation principles like permissive hypotension in trauma cases. Additionally, pain management with agents such as fentanyl lollipops or Pentrox® and the administration of antibiotics are discussed, as well as splinting and managing fractures.

3. **Tactical Evacuation Care (TACEVAC):** This phase addresses the considerations for patient transport in tactical environments, considering factors such as air superiority and potential conflicts. Topics include effective patient packaging for rapid extraction, advanced monitoring and interventions during transit, the integration of remote monitoring technology or drone evacuation, and coordination with higher-level care facilities.

IV. Haemorrhage Control and Trauma Management

Participants will learn the proper application of tourniquets, including common mistakes to avoid. Techniques for wound packing using haemostatic agents, applying pressure dressings, and addressing junctional haemorrhage will be explored. This section also covers recognising and treating shock, as well as the use of field tranexamic acid (TXA).

V. Airway and Respiratory Management in Tactical Settings

The module focuses on assessing and managing airways in high-threat environments. Providers will gain hands-on experience in treating penetrating chest trauma, such as sucking chest wounds and tension pneumothorax, using occlusive dressings and needle decompression.

CARE UNDER FIRE (CONT'D)

VI. Medical Considerations in Tactical Operations

This section highlights the importance of hypothermia prevention in trauma patients and provides an overview of pain management options, including ketamine and fentanyl lollipops. The use of antibiotics in prolonged field care scenarios will be discussed, alongside strategies for managing burn and blast injuries.

VII. Evacuation and Prolonged Field Care

Participants will practice patient movement techniques such as one-man drags, fireman's carries, and litter carries. The challenges of prolonged field care in austere environments will be addressed, with an emphasis on maintaining patient stabilisation throughout transportation.

VIII. Practical Skills Stations

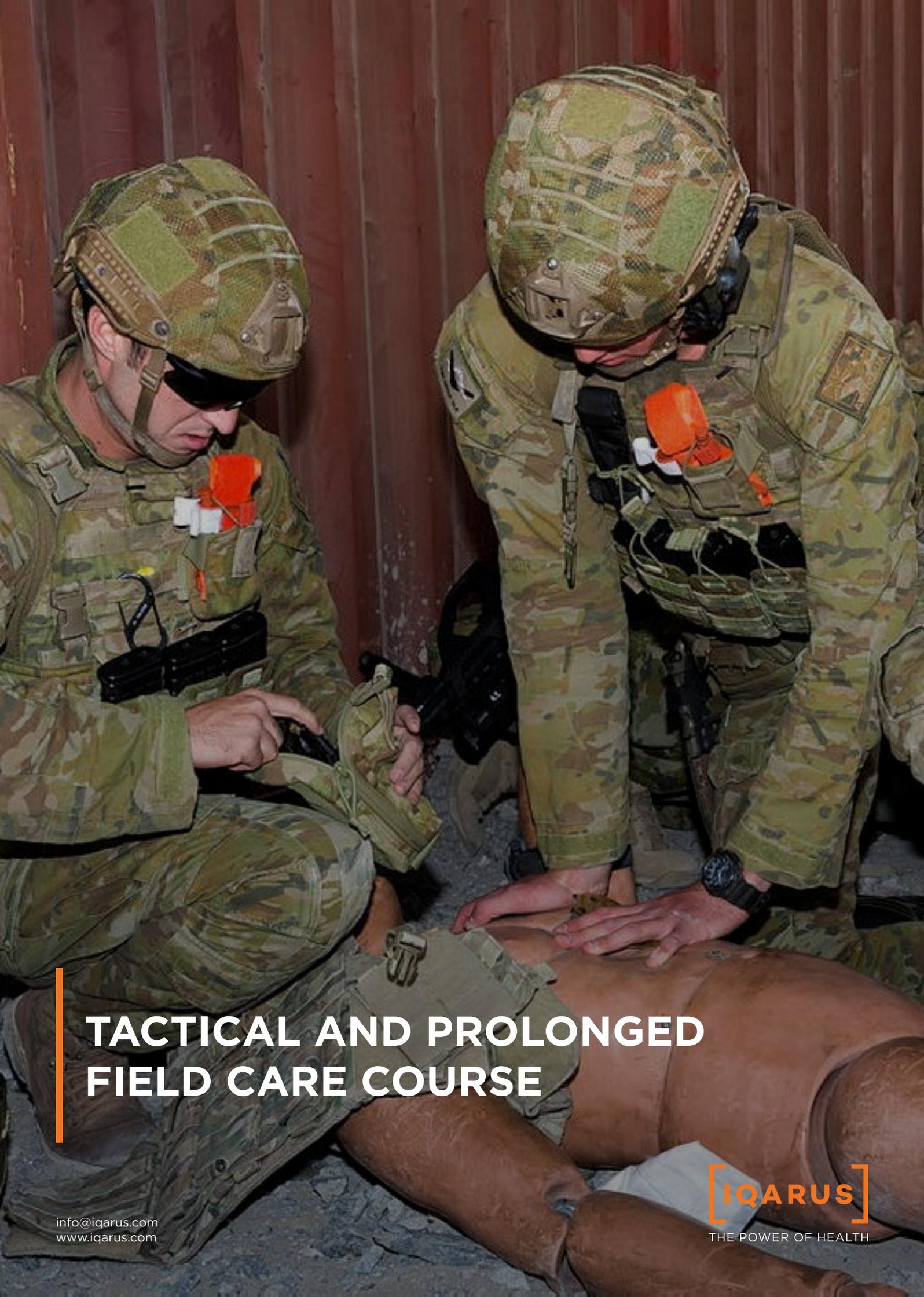
In this hands-on segment, participants will engage in drills to master the application of tourniquets, wound packing, airway management under stress, needle decompression, and casualty movement techniques. These exercises are designed to enhance proficiency and confidence in critical skills.

IX. Scenario-Based Training and Simulation

Realistic, live-action scenarios will be used to simulate hostile threats and high-stress environments. Participants will undergo stress inoculation training and practice rapid casualty assessments under simulated fire. Decision-making skills will be honed through exposure to high-pressure situations.

X. Conclusion and After-Action Review

The course concludes with an after-action review to discuss lessons learned and best practices. Strategies for building psychological resilience among pre-hospital providers in combat zones will be explored. Participants will also receive certification and opportunities for continuing education to further their professional development.



TACTICAL AND PROLONGED FIELD CARE COURSE

info@iqarus.com
www.iqarus.com

[IQARUS]
THE POWER OF HEALTH

TACTICAL AND PROLONGED FIELD CARE COURSE

I. Introduction to Tactical and Prolonged Field Care (PFC)

This module introduces the concept and significance of Prolonged Field Care (PFC), which involves providing medical support when evacuation is delayed beyond standard timelines. Participants will explore the differences between traditional pre-hospital care and the unique demands of extended austere medical care. The principles of damage control resuscitation (DCR) in the field will also be discussed, emphasising their critical importance in tactical scenarios.

II. Threat and Operational Environment Considerations

Effective care in tactical environments requires a keen understanding of scene safety and tactical movement. This section will highlight the integration of medical providers with tactical teams and operational planning, as well as effective communication and coordination with command and support elements. Participants will also learn to optimise the use of available resources and develop improvised solutions in challenging environments.

III. Phases of Tactical and Prolonged Field Care

1. Prolonged Field Care (PFC) Basics: This phase covers the fundamentals of PFC, focusing on delivering care when evacuation is delayed. Topics include prioritising medical interventions in resource-limited settings, continuous patient monitoring and reassessment, and maintaining thorough documentation to support medical decision-making in austere environments.

IV. Airway and Respiratory Management in Extended Care

Participants will gain expertise in advanced airway techniques, such as the use of supraglottic airways and cricothyroidotomy. The management of ventilatory failure using oxygen therapy and bag-valve-mask (BVM) techniques will be discussed, along with comprehensive strategies for addressing chest trauma, including chest seals, needle thoracostomy, and finger thoracostomy. Emphasis will be placed on monitoring for respiratory deterioration over time.

V. Haemorrhage Control and Circulatory Support

This module addresses the critical importance of haemorrhage control in prolonged care scenarios. Topics include tourniquet conversion and reassessment, advanced wound packing techniques with haemostatic agents, and strategies for damage control resuscitation, such as the use of whole blood, TXA, and plasma substitutes. Participants will also explore the principles of hypotensive resuscitation to optimise patient outcomes.

VI. Infection Control and Antibiotic Use

Effective infection control is essential in field care. Participants will learn to recognise early signs of infection in field settings and administer antibiotics for open wounds and penetrating trauma. Techniques for wound decontamination and dressing changes in prolonged care will also be covered.

VII. Pain and Sedation Management

This section explores field-expedient methods for pain control, including oral, intramuscular (IM), and intravenous/intraosseous (IV/IO) medications. The use of ketamine and fentanyl in tactical and prolonged care settings will be discussed, alongside sedation strategies for procedures and patient comfort. Non-pharmacologic pain management approaches will also be introduced.

TACTICAL AND PROLONGED FIELD CARE COURSE (CONT'D)

VIII. Neurological Assessment and Head Injury Management

Participants will learn how to perform field assessments for traumatic brain injuries (TBI), recognise signs of elevated intracranial pressure (ICP), and implement resource-limited interventions for head injuries.

IX. Temperature and Metabolic Management

This module emphasises the prevention and treatment of hypothermia in trauma patients and explores the management of heat injuries, such as heat exhaustion and heat stroke. Participants will also gain insight into fluid and electrolyte balance considerations in prolonged care scenarios.

X. Prolonged Wound and Burn Care

Effective wounds and burn care are crucial in extended care situations. Topics include dressing changes, infection prevention, burn classification, and field treatment options. Improvised wound care methods for extended care scenarios will also be discussed.

XI. Patient Monitoring and Decision-Making in PFC

Participants will develop skills in monitoring vital signs without advanced equipment and utilising makeshift diagnostic tools. The importance of recognising patient deterioration and making triage decisions in resource-limited environments will be emphasised.

XII. Austere Evacuation and Patient Movement

This section provides practical guidance on using improvised stretchers and movement techniques, litter packaging for prolonged transport, and effective communication with evacuation assets to coordinate extraction.

XIII. Psychological and Ethical Considerations in PFC

Medical providers in tactical environments face unique psychological and ethical challenges. Participants will explore strategies for managing combat stress and addressing mental health challenges, ethical decision-making in resource-limited environments, and end-of-life care considerations in the field.

XIV. Practical Skills Stations

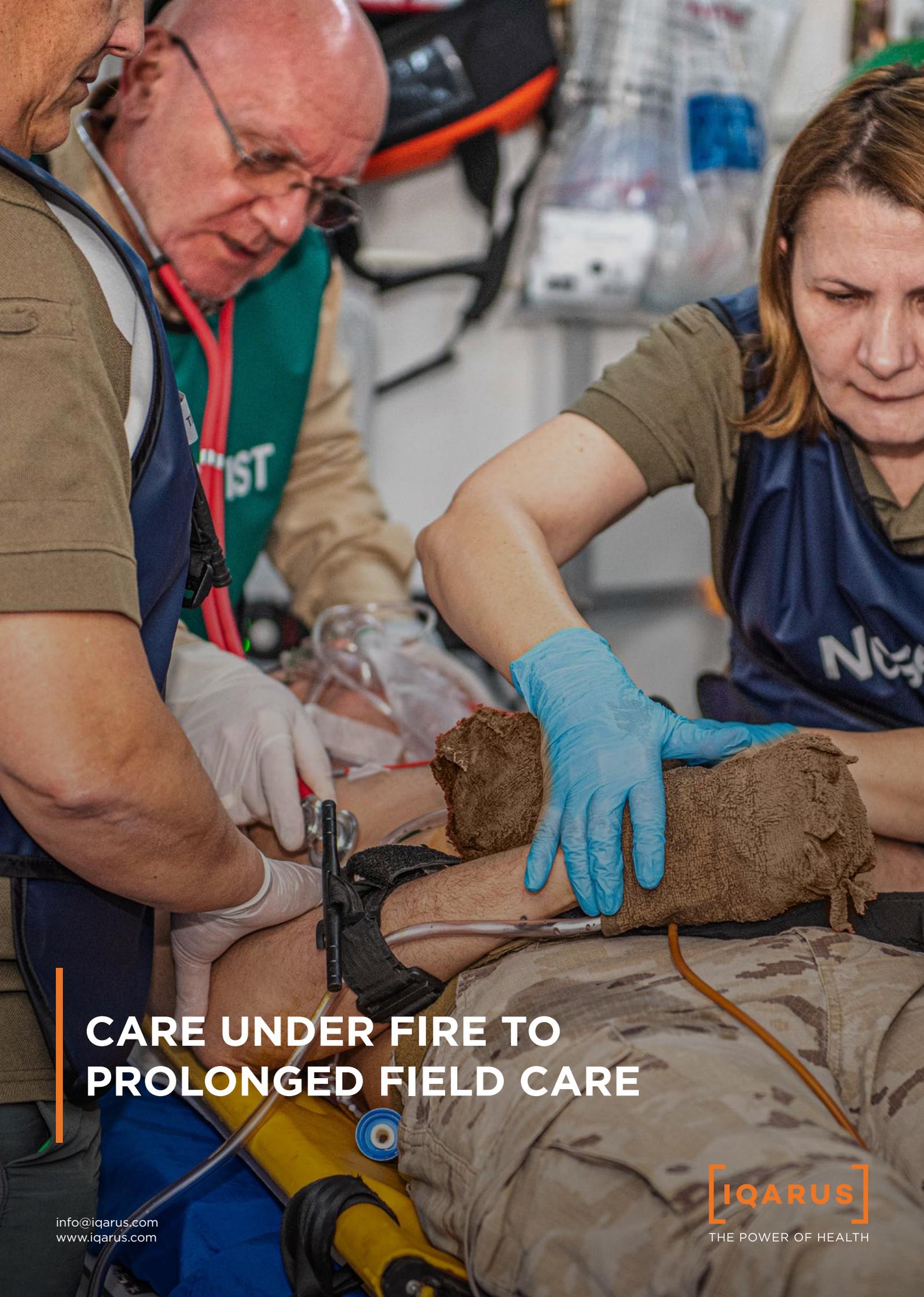
Hands-on training will include advanced airway management techniques, such as cricothyroidotomy, tourniquet conversion, prolonged haemorrhage control, IV/IO access, fluid resuscitation drills, prolonged wound care, and tactical evacuation and casualty movement techniques.

XV. Scenario-Based Training and Field Exercises

Participants will engage in realistic tactical medical scenarios with extended care timelines. Team-based problem-solving under simulated operational stress will be emphasised, incorporating logistics and improvisation into patient care. The final field exercise will feature a multi-casualty prolonged care scenario, testing participants' abilities in a challenging environment.

XVI. Course Conclusion and After-Action Review (AAR)

The course concludes with a comprehensive after-action review, focusing on lessons learned and best practices. Participants will receive guidance on certification, further training opportunities, and personal development to continue their education in tactical medicine.



**CARE UNDER FIRE TO
PROLONGED FIELD CARE**

CARE UNDER FIRE TO PROLONGED FIELD CARE

I. Introduction to Casualty Evacuation (CASEVAC) in Tactical and Austere Environments

This section introduces the concepts and distinctions between Casualty Evacuation (CASEVAC), Medical Evacuation (MEDEVAC), and Tactical Evacuation (TACEVAC). The importance of rapid and effective evacuation in both tactical and prolonged care scenarios is highlighted, alongside an overview of the evacuation process from the point of injury to higher levels of care. Participants will also explore considerations unique to both military and austere civilian environments.

II. Threat and Operational Environment Considerations

Understanding and mitigating threats during casualty evacuation is a critical component of this course. Emphasis is placed on effective communication and coordination with tactical teams and command elements. Participants will learn techniques to utilise cover and concealment during high-threat evacuations, as well as tactical movement strategies to extract casualties safely.

III. Phases of Evacuation and Care Transition

1. Care Under Fire (CUF) and Immediate Evacuation: This phase focuses on rapid extraction techniques under active threats. Minimal medical interventions are prioritised, such as haemorrhage control with tourniquets and airway positioning. The movement of casualties to a more secure location is emphasised to facilitate further care.

2. Tactical Field Care (TFC) and Evacuation Planning: In this phase, patient stabilisation is performed before evacuation. Topics include evaluating the most suitable evacuation method—be it by ground, air, vehicle, or foot—and packaging patients for safe movement. Pain management strategies and the importance of communicating patient conditions to receiving teams are also discussed.

3. Prolonged Field Care (PFC) Considerations in Evacuation: When delays extend beyond standard evacuation timelines, continuous reassessment and monitoring become vital. Participants will explore methods for managing limited resources, addressing patient deterioration, and utilising improvised transport and care techniques during extended transports.

IV. Casualty Movement Techniques in High-Threat Environments

This module covers practical techniques for moving casualties in high-threat environments. Participants will practice one-man, and two-man drags, including both low and high-profile methods, as well as the fireman's carry and other modified techniques suitable for tactical settings. Litter and improvised stretcher methods will be demonstrated, with additional considerations for non-ambulatory and unconscious casualties.

V. Patient Packaging and Transport Considerations

Properly packaging casualties for transport is essential for their stabilisation. Topics include securing casualties on various transport platforms, such as ground vehicles and rotary or fixed-wing aircraft, as well as preventing hypothermia and shock during transit. Techniques for splinting, wound stabilisation, and IV/IO access en route, as well as managing airway and respiratory support, will be addressed.

CARE UNDER FIRE TO PROLONGED FIELD CARE (CONT'D)

VI. Aeromedical Considerations and Evacuation Platforms

This section examines the differences between rotary-wing (helicopter) and fixed-wing evacuation platforms and their respective implications for patient care. Participants will learn about the medical effects of altitude, vibration, and G-forces, as well as the role of flight medics and en route care providers. Effective communication with receiving medical facilities will also be discussed.

VII. Medical Logistics and Equipment Considerations for CASEVAC

Participants will explore the balance between minimal and advanced medical kits for evacuation scenarios. Improvised solutions for transport and prolonged care will be highlighted, along with strategies for managing medical supplies and addressing resupply challenges in austere environments.

VIII. Prolonged Evacuation and Austere Evacuation Challenges

This module addresses the unique challenges of prolonged transport with limited resources. Topics include improvised airway and circulatory support, psychological support for casualties and caregivers, and decision-making in extreme resource-limited situations.

IX. Practical Skills Stations

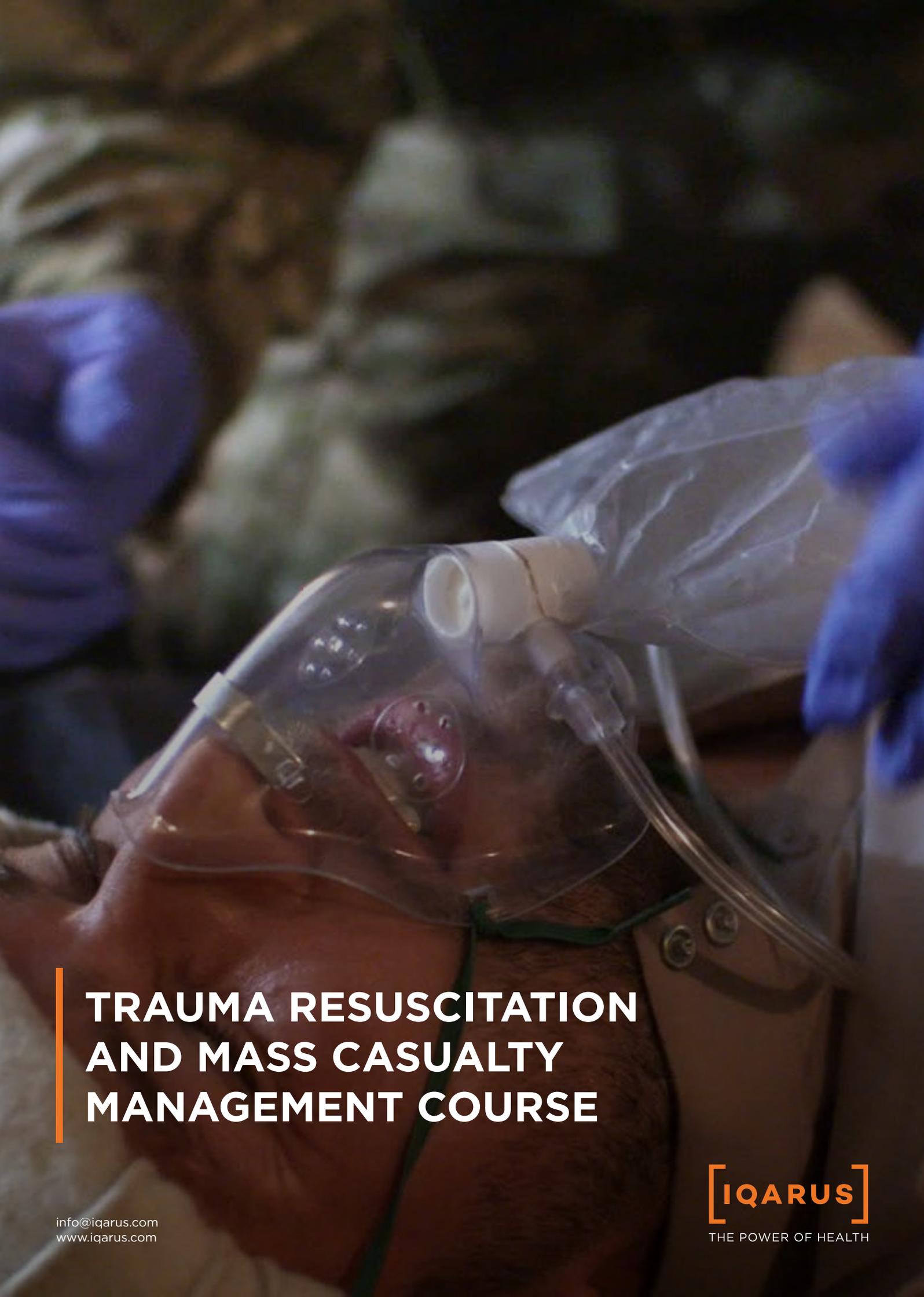
Hands-on training will focus on tactical casualty movement drills in simulated threat environments. Participants will practice litter and improvised carry techniques, patient packaging for various transport methods, and airway and IV/IO access during transport. Managing medical interventions during prolonged movement will also be covered.

X. Scenario-Based Training and Field Exercises

Realistic evacuation scenarios will integrate care under fire, tactical field care, and prolonged care principles. Full mission profiles will incorporate casualty extraction, stabilisation, and transport under operational stress. Multi-casualty evacuation drills will challenge participants to make decisions with limited resources. After-action reviews (AARs) will provide opportunities for performance improvement.

XI. Course Conclusion and Certification

The course concludes with a review of key lessons and takeaways. Participants will receive certification for completing the training, alongside recommendations for advanced CASEVAC training and continuing education opportunities in tactical medicine.



TRAUMA RESUSCITATION AND MASS CASUALTY MANAGEMENT COURSE

info@iqarus.com
www.iqarus.com

[IQARUS]
THE POWER OF HEALTH

TRAUMA RESUSCITATION AND MASS CASUALTY MANAGEMENT COURSE

I. Introduction to Trauma Resuscitation and MCI Management

This course begins with an overview of its objectives and expected learning outcomes, emphasising the importance of rapid assessment and prioritisation in trauma scenarios. Participants will gain insights into trauma care across pre-hospital and hospital settings, with a focus on integrating triage and resuscitation strategies in mass casualty incidents (MCIs).

II. Prioritisation of Treatment Based on Injury Severity

This section focuses on the principles of trauma severity assessment and the recognition of injury patterns that demand time-sensitive interventions. Participants will learn to differentiate between immediate, delayed, and expectant care categories. Additionally, they will be trained to identify signs of critical deterioration, such as shock and airway compromise, to prioritise life-saving interventions effectively.

III. Rapid Trauma Resuscitation Techniques

This module explores key trauma resuscitation techniques, with a comparison of the ABC (Airway, Breathing, Circulation) and MARCH (Massive Haemorrhage, Airway, Respiration, Circulation, Hypothermia) approaches. The principles of damage control resuscitation (DCR) will be discussed, alongside the use of haemostatic agents, tourniquets, and junctional haemorrhage control methods. Early recognition and management of traumatic shock will be emphasised to optimise outcomes in critically injured patients.

IV. Mass Casualty Incident (MCI) Management

Participants will examine the definition and classification of MCIs, as well as the organisation of medical responses under an Incident Command System (ICS). Key topics include resource allocation, casualty flow management, and communication with emergency response teams. Emphasis will be placed on the coordination required to handle mass casualty events effectively.

V. Triage Algorithms for Effective Casualty Management

In this section, participants will be introduced to triage algorithms such as SALT (Sort, Assess, Lifesaving Interventions, Treatment/Transport), START (Simple Triage and Rapid Treatment), and MARCH. Hands-on exercises will provide opportunities to practice triage decision-making, ensuring participants are prepared to manage casualties effectively in high-pressure scenarios.

VI. Massive Transfusion Protocols (MTPs)

This module covers the activation and execution of Massive Transfusion Protocols (MTPs). Participants will explore the components of balanced resuscitation, including the 1:1:1 ratio of plasma, platelets, and red blood cells (RBCs). The early administration of Tranexamic Acid (TXA) and field-expedient blood transfusion techniques will also be discussed.

VII. Use of Whole Blood and Blood Products in Field Settings

The advantages of whole blood in trauma resuscitation will be highlighted in this section. Participants will learn about field collection, storage, and transfusion methods, as well as considerations for administering blood products in pre-hospital and austere environments. Screening and safety protocols for field transfusion will also be emphasised.

TRAUMA RESUSCITATION AND MASS CASUALTY MANAGEMENT COURSE (CONT'D)

VIII. Emergency Airway Management

This module addresses both basic and advanced airway management techniques. Basic interventions, such as the jaw thrust manoeuvre and NPA (nasopharyngeal airway) or OPA (oropharyngeal airway) placement, will be covered alongside advanced procedures like cricothyroidotomy and Rapid Sequence Intubation (RSI). Special attention will be given to managing airways in trauma patients with suspected cervical spine injuries.

IX. Practical Skills Stations

Hands-on training sessions will include triage scenario drills using SALT, START, and MARCH algorithms, as well as haemorrhage control and resuscitation techniques such as the application of tourniquets, TXA administration, and whole blood transfusion. Participants will also practice emergency airway skills, including cricothyroidotomy, RSI, and supraglottic airway placement. Massive transfusion simulations will further enhance their proficiency.

X. Scenario-Based Training and Simulation Exercises

Participants will engage in realistic mass casualty simulations, incorporating dynamic triage, resource management, and trauma resuscitation under stress. These exercises will include airway and haemorrhage control challenges in field conditions, providing comprehensive training experience. After-action reviews (AARs) and debriefing sessions will facilitate performance feedback and improvement.

XI. Course Conclusion and Certification

The course concludes with a review of key concepts and lessons learned. Participants will receive individual and team performance feedback, as well as certification in trauma resuscitation and mass casualty incident management. Recommendations for continued training and advanced courses will be provided to support participants in their ongoing professional development.



DAMAGE CONTROL SURGERY (DCS) COURSE

info@iqarus.com
www.iqarus.com

[IQARUS]
THE POWER OF HEALTH

DAMAGE CONTROL SURGERY (DCS) COURSE

I. Course Introduction and Objectives

This course begins with an overview of Damage Control Surgery (DCS) and its applications in austere and resource-limited environments. The objectives of the course include training participants to perform life-saving surgical interventions under challenging conditions, minimising surgical time and the physiological burden on casualties, and preparing patients for definitive care at higher echelons. The importance of staged surgical management in both combat and disaster settings will be emphasised as a critical element of effective trauma care.

II. Principles of Damage Control Surgery (DCS)

The foundational principles of DCS focus on staged surgical resuscitation. This section explores the indications for DCS versus definitive surgery and introduces the key phases of DCS:

- 1. Haemorrhage Control:** Techniques such as tourniquets, vessel ligation, vascular shunting, and wound packing are discussed to minimise blood loss.
- 2. Fracture stabilisation:** Methods for managing fractures and soft tissue injuries with minimal equipment will also be demonstrated. External fixation of long bone and pelvic fractures.
- 3. Contamination Control:** Methods including bowel diversion, wound packing, wound debridement and irrigation are examined to prevent infection and further complications.
- 4. Temporary Wound Closure:** Participants will learn techniques to protect fascia, minimise infection risk, and prevent abdominal compartment syndrome.
- 5. Physiologic Stabilisation:** Strategies for resuscitation and stabilisation before transport are emphasised to prepare the casualty for evacuation.
- 6. Definitive Repair:** The final phase involves comprehensive surgical care at Role 3 or higher-level facilities, where advanced resources and expertise are available.

III. Temporary Abdominal Closure Techniques

This module focuses on the indications and rationale for leaving the abdomen open in certain trauma scenarios. Participants will learn techniques for temporary abdominal closure, including negative pressure wound therapy (NPWT), the Bogota bag method, and the use of commercial or improvised closure devices. Strategies to prevent abdominal compartment syndrome will also be highlighted.

IV. Field-Expedient Surgical Tools and Techniques

In austere environments, the ability to adapt and improvise is essential. This section explores the selection and use of field-expedient surgical instruments, techniques for applying haemostatic agents and field suturing, and the role of autotransfusion in resource-limited settings.

V. Coordination with Forward Surgical Teams and Role 3 Hospitals

Participants will gain insights into the role of Forward Resuscitative Surgical Teams (FRST) in providing lifesaving care. This module covers evacuation considerations, including transport decision-making and pre-transport stabilisation strategies. Effective communication and patient handover protocols to higher-level facilities will be emphasised to ensure continuity of care.

DAMAGE CONTROL SURGERY (DCS) COURSE (CONT'D)

VI. Hands-On Skills Labs and Simulations

Hands-on training forms a crucial part of the course. Participants will practice skills such as haemorrhage control, vessel repair, and vascular shunting or ligation. Emergency laparotomies, management of solid organ and bowel injuries, and temporary abdominal closure techniques (e.g., Bogota bag, NPWT) will be covered. Surgical improvisation exercises in austere environments and mass casualty scenarios will enable participants to make critical decisions under pressure.

VII. Scenario-Based Training

This section involves live or simulated cases to reinforce DCS principles and techniques. Participants will tackle realistic challenges, such as managing multiple casualties with limited resources, coordinating evacuations, and working as a team under high-stress conditions. After-Action Reviews (AAR) and performance feedback sessions will facilitate continuous improvement and learning.

VIII. Course Conclusion and Certification

The course concludes with a comprehensive review of key principles and techniques learned during the program. Participants will undergo individual and team performance assessments and receive certification in Damage Control Surgery for austere environments. Recommendations for continued training and skill sustainment will also be provided to support long-term professional development.



POST-OPERATIVE CARE AND LONG-TERM EVACUATION

POST-OPERATIVE CARE AND LONG-TERM EVACUATION COURSE

I. Course Introduction and Objectives

This course provides an in-depth overview of post-operative care in austere and prolonged field settings. The primary objectives are to train participants to effectively monitor and stabilise post-operative patients, prevent and manage infections and complications, and prepare patients for strategic evacuation to higher levels of care. Emphasis will be placed on the critical importance of maintaining continuity of care in prolonged field care (PFC) environments, ensuring the best possible outcomes under resource-limited conditions.

II. Post-Operative Pain Management and Wound Care

Participants will explore the principles of pain management in resource-constrained settings. Topics will include the use of opioid and non-opioid analgesia, as well as regional and field-expedient anaesthesia techniques. The section will also cover wound assessment and classification, selecting appropriate dressings, and implementing advanced wound management strategies such as vacuum-assisted closure (VAC) therapy and delayed closure. Additionally, participants will learn techniques for managing surgical drains and monitoring wound healing progression over time.

III. Infection Control in Austere Environments

Infection control is a critical aspect of post-operative care in austere environments. This module focuses on recognising common post-operative infections and associated risk factors. Participants will be trained in sterile techniques, aseptic wound management, and field-expedient sterilisation methods for surgical instruments. Topics will also include the principles of antibiotic stewardship, treatment protocols, and the early detection and management of sepsis in challenging field conditions.

IV. Nutrition and Hydration Support

This section addresses the nutritional and hydration needs of post-operative patients. Participants will examine the options for enteral versus parenteral nutrition in the field, as well as strategies for managing hydration and fluid therapy. Emphasis will also be placed on maintaining electrolyte balance and preventing metabolic complications to support patient recovery.

V. Prolonged Field Care (PFC – Role 1/2) Strategies

Participants will gain a comprehensive understanding of the definition and principles of prolonged field care (PFC). Key topics include monitoring vital signs to detect signs of deterioration, providing respiratory support and oxygen therapy, and addressing the psychological and mental health needs of patients in prolonged care settings. This module equips participants with the knowledge needed to provide sustained care in austere conditions.

VI. Preparation for Strategic Evacuation

The course explores strategies for stabilising and packaging post-operative patients for safe evacuation. Topics include considerations for aeromedical evacuation, such as managing ventilation, pain control, and wound care during transport. Participants will also learn how to coordinate with higher-echelon medical facilities and effectively document and hand over patient information to transport teams for seamless transitions of care.

POST-OPERATIVE CARE AND LONG-TERM EVACUATION COURSE (CONT'D)

VII. Hands-On Skills Labs and Scenario-Based Training

Practical training sessions will focus on key skills such as wound dressing, infection management, and field-expedient pain control techniques. Participants will practice triage and decision-making for patient evacuation, as well as drills for prolonged patient monitoring and resuscitation. These hands-on labs are designed to reinforce theoretical knowledge and build confidence in applying skills in real-world scenarios.

VIII. Course Conclusion and Certification

The course concludes with a review of the key concepts and skills covered throughout the program. Participants will receive assessments of their individual and team performance, followed by certification in post-operative and prolonged field care. Recommendations for continued training and practical field applications will be provided to support participants' ongoing professional development in challenging environments.